

DYNAMIC RESOURCE ALLOCATION USING PROJECTED FUTURE BENEFITS

ABSTRACT OF THE DISCLOSURE

5 A method for server allocation in a Web server "farm" is based on
limited information regarding future loads to achieve close to the greatest
possible revenue based on the assumption that revenue is proportional to the
utilization of servers and differentiated by customer class. The method of
server allocation uses an approach of "discounting the future". Specifically,
when the policy faces the choice between a guaranteed benefit immediately
10 and a potential benefit in the future, the decision is made by comparing the
guaranteed benefit value with a discounted value of the potential future
benefit. This discount factor is exponential in the number of time units that it
would take a potential benefit to be materialized. The future benefits are
discounted because by the time a benefit will be materialized, things might
15 change and the algorithm might decide to make another choice for a potential
(even greater) benefit.